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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,149	08/21/2006	Toshio Morohashi	5090-0103PUS1	5825

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EXAMINER

PATEL, NIRAV G

ART UNIT	PAPER NUMBER
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2624

NOTIFICATION DATE	DELIVERY MODE
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06/23/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

**Supplemental
Notice of Allowability**

Application No.

10/590,149

Examiner

NIRAV G. PATEL

Applicant(s)

MOROHASHI, TOSHIO

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to a voice message left 5/31/2011.
2. ☒ The allowed claim(s) is/are 1-5 and 7-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

/Brian P. Werner/
Primary Examiner, Art Unit 2624

/NIRAV G PATEL/
Examiner, Art Unit 2624

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Larsen (Reg. No.: 58,565) on April 14, 2011.

The application has been amended as follows:

1. An image compression method comprising:
 - a preprocessing step of performing preprocessing on input image data; and
 - a data compressing step of performing a data compression processing on preprocessed image data, wherein
 - said preprocessing step includes:
 - a filtering region dividing step of dividing said input image data into a plurality of filtering regions being units for a filtering processing;
 - a region designating step of discriminating important regions from unimportant regions in said input image data; and
 - a filtering step of performing said filtering processing only on said unimportant regions for each of said filtering regions to attenuate a high frequency component of said input image data,
 - said data compressing step includes:

a block region dividing step of dividing said preprocessed image data into a plurality of block regions being units for an orthogonal transform, each shape of which is rectangular;

an orthogonal transforming step of performing said orthogonal transform processing said image data for each of said block regions; and

a quantizing step of quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions,

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

2. An image compression apparatus comprising:

preprocessing means for preprocessing input image data; and

data compressing means for performing a data compression processing on preprocessed image data, wherein

said preprocessing means includes:

filtering region dividing means for dividing said input image data into a plurality of filtering regions being units for a filtering processing;

region designating means for discriminating important regions from unimportant regions in said input image data; and

filtering means for performing said filtering processing only on said unimportant regions for each of said filtering regions to attenuate the high frequency component of said input image data,

said data compressing means includes:

block region dividing means for dividing said preprocessed image data into the plurality of block regions being units for an orthogonal transform, each shape of which is rectangular;

orthogonal transforming means for performing said orthogonal transform processing on said image data for each of said block regions; and

quantizing means for quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions,

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

9. An image transmission system comprising:

a preprocessing apparatus connected to a data compression apparatus through a first communication line, and

a data expansion apparatus connected to said data compression apparatus through a second communication line, wherein

said preprocessing apparatus includes:

filtering region dividing means for dividing input image data into a plurality of filtering regions being units for a filtering processing;

region designating means for discriminating important regions from unimportant regions in said input image data;

filtering means for performing said filtering processing only on said unimportant regions for each of said filtering regions to attenuate a high frequency component of said input image data; and

data transmission means for transmitting said image data that has been subjected to said filtering processing to said first communication line,

said data compression apparatus includes:

block region dividing means for dividing preprocessed image data into a plurality of block regions being units for an orthogonal transform, each shape of which is rectangular;

orthogonal transforming means for performing said orthogonal transform processing on said image data for each of said block regions;

quantizing means for quantizing said image data that has been subjected to said orthogonal transform processing for each of said block regions; and

data transmitting means for transmitting encoded image data to said data expansion apparatus through said second communication line,

wherein each of the filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and said filtering processing is performed using a low-pass filter common to said respective filtering regions.

11. A data compression preprocessing apparatus for preprocessing image data input to a data compression apparatus that divides said image data into a plurality of rectangular block regions being units for an orthogonal transform, and that performs said orthogonal transform and a quantization on said input data for each of the block regions, the data compression preprocessing apparatus comprising:

filtering region dividing means for dividing said input image data into a plurality of filtering regions being units for a filtering processing;

region designating means for discriminating important regions from unimportant regions in said input image data; and

filtering means for performing said filtering processing only on said unimportant regions for each of said filtering regions to attenuate a high frequency component of said input image data,

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by 2^n (where n is a natural number) and each having a size of two or more pixels, and

said filtering processing is performed using a low-pass filter common to said respective filtering regions.

12. A non-transitory computer-readable medium having recorded thereon a computer program for preprocessing image data input to a data compression apparatus that divides said input image data into a plurality of block regions being rectangular units for an orthogonal transform, and that performs said orthogonal transform and a quantization on said input image data for each of said block regions, the computer program comprising procedures for executing:

a filtering region dividing step of dividing said input image data into a plurality of filtering regions being units for a filtering processing;

a region designating step of discriminating important regions from unimportant regions in said input image data; and

a filtering step of performing said filtering processing only on said unimportant regions for each of the filtering regions to attenuate a high frequency component of said input image data,

wherein each of said filtering regions is a cluster which is included in and is smaller than said block region, and which is consisting of one or more adjacent rectangular regions, each of the rectangular regions being obtained by equally dividing each of said block regions by $2n$ (where n is a natural number) and each having a size of two or more pixels, and

said filtering processing is performed using a low-pass filter common to said respective filtering regions.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance: the prior art of record fails to anticipate or render obvious the amended limitations of claims 1, 2, 9, 11 and 12. Particularly, the claims require among the other recited limitations that the filtering processing is conducted only on the unimportant regions. The combination of would have been to replace the compression processing (S1007, Figure 7) of Kato with units 102 through 105 of Ohyama. This would not meet the limitations of the claim as both the important and unimportant regions are filtered. Furthermore, it is noted that the small blocks divided by 104 is for coding (determining code size), not filtering, thus unable to replace spatial filter processing. It is for these reasons that the claim is not anticipated or rendered obvious in combination by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

Art Unit: 2624

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIRAV G. PATEL whose telephone number is (571)270-5812. The examiner can normally be reached on Monday - Friday 8 am - 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NIRAV G PATEL/
Examiner, Art Unit 2624

/Brian P. Werner/
Primary Examiner, Art Unit 2624

Application/Control Number: 10/590,149
Art Unit: 2624

Page 10